REMARKS

This Reply is in response to the Final Office Action mailed on October 21, 2004 in which Claims 47-48 and 55-56 were withdrawn and in which Claims 1-11, 14-23, 29-38, 40-46, 49-54 and 57-59 were rejected. With this response, Applicants request that Claims 47-48 and 55-56 be reinstated and that Claims 47 and 58 be amended as indicated above. Reconsideration and allowance of Claims 1-11, 14-23, 29-38 and 40-59 are respectfully requested.

I. Examiner Interview Summary.

On November 29, 2004, a telephonic interview was held between Examiner Liang and Applicant's attorney, Todd A. Rathe. The withdrawal of Claims 47-48 and 55-56 and the rejection of Claims 1, 7, 9, 11, 17, 18, 30 and 33 were discussed. It was tentatively agreed upon that the rejection of Claims 7, 9, 10, 11, 30 and 33 would be withdrawn since neither Richtsmeier nor Smith disclose the recited sources of heat. Although no specific agreement was reached with respect to Claim 1, Applicants wish to thank Examiner Liang for the opportunity to discuss the rejection of Claim 1.

During the Examiner interview, it was also agreed upon that the finality of the Office Action would be withdrawn.

II. Request for Reinstatement of Claims 47-48 and 55-56.

Page 2 of the Office Action withdrew newly added Claims 47-48 and 55-56 from consideration and asserted that such added claims did not seem to belong to the previously elected species of Figure 4. However, the subject matter of added Claims 47-48 and 55-56 is part of the subject matter of the species of Figure 4 and is indeed similar to the subject matter of other claims already examined. Claim 47 recites that the first directional component of the airflow is directed at the first surface and at a first magnitude at the central portion and at a second greater magnitude at the lateral edge. Claim 48 recites that the second directional of the airflow has a first magnitude at the lateral edge and a second greater magnitude at

the central region. Claim 55 recites that the pressurized air source has a directional component directed at the first surface with a first magnitude at the central portion and a second greater magnitude at the lateral edge. Claim 56 recites that airflow from the pressurized air source has a directional component away from the printzone with a first magnitude at the lateral edge and a second greater magnitude at the central region. Page 16, line 11 of the application states:

> Achieving the illustrated magnitude variation in directional components 104a and 104b as shown in FIGS. 8 and 9 may be accomplished by a variety of particular structural features of an air knife vent. Accordingly, variation in cross sectional area as well as directional or guide surface features of portions of conduit 122 and vent 102 can be fashioned to produce the variation in components 104a and 104b as illustrated herein.

Vent 102 is the vent shown in the embodiment of Figure 4, the elected species. Moreover, several claims, such as Claims 17 and 18, also recite varying magnitudes of airflow across the media and have already been examined. Accordingly, Applicants request that withdrawn Claims 47-48 and 55-56 be reinstated.

III. Rejection of Claims 57-58 Under 35 U.S.C. § 102(b) Based Upon Richtsmeier.

Page 2 of the Office Action rejected Claims 57-58 under 35 U.S.C. § 102(b) as being anticipated by Richtsmeier et al., U.S. Patent No. 5,428,384. Claim 58 is amended. Claims 57 and 58, as amended, overcome the rejection based upon Richtsmeier.

A. Claim 57.

Claim 57 recites a printing mechanism which includes a controller configured to generate control signals directing the operation of the printing mechanism and a pressurized air source creating an airflow configured such that the airflow is heated by heat emitted from the controller, wherein the pressurized air source is configured to direct the heated airflow against the print surface.

Richtsmeier fails to disclose a printing mechanism having a pressurized air source that creates an airflow that is heated by heat emitted from a controller and directs the heated airflow against a print surface. In contrast, Richtsmeier merely discloses airflow which is heated by a preheat bulb 114 (see col. 6, lines 32-58). Accordingly, Applicants respectfully request that the rejection of Claim 57 based upon Richtsmeier be withdrawn.

B. Claim 58.

Claim 58, as amended, recites a printing mechanism which includes a pressurized air source having at least one vent opening proximate the print surface. The pressurized air source is configured to create a first airflow having a first magnitude at a first lateral region of the print surface and a second airflow having a second distinct magnitude at a second distinct lateral region of the print surface.

Richtsmeier fails to disclose or suggest a pressurized air source configured to create an airflow having a first magnitude at a first lateral region and a second distinct magnitude at a second distinct lateral region of the print surface. Page 3 of the Office Action refers to reference 90 and the airflow arrows of Richtsmeier. However, Richtsmeier does not appear to disclose that the airflow arrows represent distinct magnitudes. Moreover, nothing in Richtsmeier indicates that the airflow produced by cross flow fan 90 would create an airflow having a first magnitude at a first lateral region of the print surface and a second distinct magnitude at a second distinct lateral region of the print surface. Thus, Claim 58, as amended, overcomes the rejection based upon Richtsmeier.

IV. Rejection of Claims 1, 2-6, 7-10, 14-20, 21-23, 29, 32, 33-38, 40-46, 49-54 and 59 Under 35 U.S.C. § 103(a) Based Upon Richtsmeier and Smith.

Page 3 of the Office Action rejected Claims 1, 2-6, 7-10, 14-20, 21-23, 29, 32, 33-38, 40-46, 49-54 and 59 under 35 U.S.C. § 103(a) as being unpatentable over Richtsmeier et al., U.S. Patent No. 5,428,384, in view of Smith, U.S. Patent No. 5,020,244. Based on the following remarks, Applicants respectfully request that

the rejection of Claims 1, 2-6, 7-10, 14-20, 21-23, 29, 32, 33-38, 40-46, 49-54 and 59 based upon Richtsmeier and Smith be withdrawn.

A. Claims 1, 19, 22, 31, 35 and 40.

Independent Claim 1 recites a method for operating a printing mechanism which includes the step of directing an airflow having a first directional component away from a printzone so as to not intersect the printzone. Independent Claims 19, 22, 31, 35 and 40 each recite an apparatus configured such that an airflow having a directional component away from the printzone so as to not intersect the printzone is created.

Neither Richtsmeier nor Smith, alone or in combination, disclose or suggest a method step of directing an airflow at a first surface of the media including a first directional component away from the printzone so as to not intersect the printzone and a second directional component into the first surface so as to urge at least a portion of the media against a support apparatus in the printzone. As acknowledged on page 10 of the Office Action, Richtsmeier fails to disclose airflow with the directional component away from the printzone so as to not intersect the printzone. As a result, the Office Action attempts to additionally rely upon Smith by asserting that it would be obvious to incorporate the teachings of Smith into the invention of Richtsmeier "so that the air blowing means of Richtsmeier et al. is located downstream from the printhead . . . to gain the benefit of providing an enhanced drying apparatus and method with optimized air velocity relative to a medium surface, a temperature of the blown air, and the relative humidity of the blown air."

However, in contrast to the Office Action assertion, it would not be obvious to modify Richtsmeier to incorporate fan 16 and housing 14 of Smith since such a modification would render Richtsmeier unsatisfactory for its intended purpose and would change the principal of operation of Richtsmeier. As noted in MPEP 2143.01:

> If the proposed modification would render the prior art invention being modified unsatisfactory for its intended

> purpose, then there is no suggestion or motivation to make the proposed modification.

Moreover, as noted in MPEP 2143.01:

> If the proposed modification or combination of the prior art would change the principal operation of the prior art invention being modified, and the teachings of the reference are not sufficient to render the claims prima facie obvious.

In the present case, Richtsmeier specifically states in its Abstract that the crossflow fan at the exit side of the printzone is used to direct an airflow at the printzone "in order to cause turbulence at the medium surface being printed." Richtsmeier further states that:

> The crossflow fan 90 directs an airflow at the printzone and surrounding printer elements. The airflow creates turbulence at the printzone, which increases the ink carrier evaporation rate, and directs airflow toward the exhaust duct intake port 80A.

(Col. 16, lines 20-24). Thus, one of the main objectives of Richtsmeier is to create turbulence at the medium surface by directing airflow so as to intersect the printzone. To alternatively modify Richtsmeier to place fan 90 on the opposite side of the print head so as to not intersect the printzone would directly contradict the teachings of Richtsmeier, would destroy the intended purpose of Richtsmeier and would change the principal of operation of Richtsmeier. Accordingly, it would not be obvious to modify Richtsmeier based upon Smith. Thus, the rejection of Claims 1, 19, 22, 31, 35 and 40 based upon Richtsmeier in view of Smith should be withdrawn. Claims 5-6, 14-18, 20, 23, 29, 32, 36-38 and 42-48 depend from independent Claims 1, 19, 22, 31, 35 and 40 and are believed to be patentably distinct over the prior art of record for the same reasons.

During the Examiner interview held on November 29, 2004, the Examiner alternatively referred to Smith alone. However, as noted during the interview, fan 16 and housing 14 do not direct an airflow or create an airflow having a directional component so as to urge at least a portion of the media against a support apparatus

in the printzone. As noted during the interview, fan 16 and housing 14 of Smith are spaced from platen 6 and printhead 4 such that the airflow may not urge the media against platen 6. In fact, it appears that roller 8 would indeed prevent the airflow created by fan 16 and housing 14 from urging media 2 against platen 6. In particular, for roller 18 to operate, it must contact the lower surface of media 2. Moreover, for roller 18 to operate, it presumably must engage media 2 at or above the surface of platen 6 and/or guide 12. As a result, any force exerted upon media 2 opposite guide 12 would not result in media 2 being urged against platen 6 in the printzone below printhead 4. Accordingly, independent Claims 1, 19, 22, 31, 35 and 40 overcome the rejection based upon Richtsmeier and Smith for this additional reason.

B. Claims 7, 9, 10, 11, 30 and 33.

Claim 7 recites a method in which the airflow being directed at the media carries heat energy taken from a heat source comprising resistive elements including electronic control circuit components. Claim 9 recites a method wherein the airflow carries heat energy taken from a heat source otherwise producing waste heat energy. Claim 10 specifies the waste heat energy originates from electronic control circuit components. Claim 11 specifies that the waste heat energy originates from motor components. Claim 30 recites an inkjet printing mechanism which includes an ink drying system having a heat source. Claim 30 specifies that the heat source comprises electrical components offering resistance to electrical current passing therethrough and that the electrically conductive components includes electronic control components directing operation of the inkjet printing mechanism. Claim 33 recites an ink assist air knife having an electronic control component means for supporting operation of inkjet printing mechanism, wherein the electronic control component means also supply heat energy.

As noted above, during the Examiner interview held on November 29, 2004, it was tentatively agreed upon that the prior art of record fails to disclose a method of Claims 7, 9, 10, 11, the inkjet printing mechanism of Claim 30 or the ink assist air

knife of Claim 33. Accordingly, Applicants respectfully request that the rejection of Claims 7, 9, 10, 11, 30 and 33 be withdrawn.

C. Claims 16 and 18.

Claim 16 depends from Claim 1 and further recites that the first directional component is substantially uniform across the media in a direction generally transverse to a feed direction of the media passing through the printzone. Claim 18 depends from Claim 1 and recites that the first directional component varies across the media in a direction generally transverse to a direction of the media passing through the printzone.

The Office Action rejected both Claims 16 and 18 based upon Richtsmeier in view of Smith. Richtsmeier merely discloses a single embodiment. Richtsmeier cannot disclose both a first directional component that is substantially uniform across the media and a first directional component that varies across the media. Thus, it appears that the Office Action's rejection of Claims 16 and 18 is inconsistent. Applicants respectfully request that the rejection of Claim 18 based upon Richtsmeier be withdrawn since Richtsmeier provides no teaching or suggestion as to why or how its crossflow fan 90 would vary a first directional component of its airflow across the media in a direction generally transverse to a direction of the media passing through the printzone.

D. Claim 17.

Claim 17 depends from Claim 16 and further recites that the second directional component has a greater magnitude at a laterally outer most portion of the media relative to a laterally central-portion of the media.

Neither Richtsmeier nor Smith, alone or in combination, disclose or suggest a method wherein the second directional component of the airflow has a greater magnitude at a laterally outer most portion of the media relative to a laterally central portion of the media. Nothing in Richtsmeier or Smith suggest such a varying airflow. Accordingly, Applicants respectfully request that the rejection of Claim 17 based upon Richtsmeier in view of Smith be withdrawn.

E. Claim 59.

Claim 59 recites a printing mechanism which includes a pressurized air source configured to direct an airflow at the print surface such that the print surface is stabilized against the support apparatus in the printzone and such that the airflow does not create air turbulence at the print surface in the printzone.

Neither Richtsmeier nor Smith, alone or in combination, disclose or suggest the pressurized air source configured to direct airflow at a print surface such that the print surface is stabilized against the support apparatus in the printzone and such that the airflow does not create air turbulence at the print surface in the printzone. As acknowledged in the Office Action, Richtsmeier fails to disclose a pressurized air source configured so as to create an airflow that does not create air turbulence at the print surface in the printzone. In fact, one of the main objectives of Richtsmeier is to cause turbulence at the medium surface being printed. Moreover, as discussed above, for this reason, it would not be obvious to modify Richtsmeier based upon Smith. In addition, Smith also fails to disclose a pressurized air source configured to direct an airflow at the print surface such that the print surface is stabilized against the support apparatus in the printzone. As noted above, nowhere does Smith teach or suggest that its fan 16 and housing 14 assist in urging or directing media 2

against platen 6. In fact, fan 16 and housing 14 are spaced such a distance from platen 6 that it appears that they cannot urge media 2 against platen 6. The positioning of roller 8 between platen 6 and fan 16/housing 14 further prevents the airflow created by fan 16 from urging media 2 against platen 6. Accordingly, Applicants respectfully request that the rejection of Claim 59 based upon Richtsmeier and Smith be withdrawn.

V. Added Claims.

With this Reply, Claims 60-62 are added. Claims 60-62 recite additional features which are believed to be patentably distinct over the prior art of record.

A. Claim 60.

Claim 60 depends from Claim 1 and further recites that the airflow is directed at the first surface prior to the first surface being engaged downstream of the printzone. As noted in Claim 1, the first surface is the surface upon which ink is applied. Figure 4 clearly illustrates directing an airflow at surface 114(a) downstream of printhead 34 prior to surface 114 being engaged downstream of printhead 34. Thus, no new matter is believed to be added.

The prior art of record fails to disclose directing airflow at the first surface prior to the first surface being engaged downstream of the printzone. For example, Richtsmeier discloses star roller 102 which is disclosed as being beneath cartridge 54. As a result, airflow from fan 90 cannot reach the print surface of the media until after the media has been engaged by star roller 102. Likewise, Smith discloses star roller 10 which engages the print surface of media 2 well before airflow from fan 16 impacts upon the print surface of media 2. Accordingly, added Claim 60 is believed to be patentably distinct over the prior art of record for this additional reason.

B. Claim 61.

Claim 61 depends from Claim 1 and further recites that the airflow directed at the first surface is also directed at the support apparatus underlying the first surface.

Figure 4 illustrates support apparatus (platen) 115. Figure 4 further illustrates airflow being directed at print surface 114A and at the underlying portion of platen 115. Thus, no new matter is believed to have been added.

The prior art of record fails to disclose or suggest the step of directing airflow at the first surface and at the support apparatus underlying the first surface. For example, although Richtsmeier discloses a screen 66 in the printzone which supports the media, screen 66 is substantially contained beneath print cartridge 54. As a result, airflow from fan 90 is not directed at the support apparatus underlying the media, but is instead directed at the print cartridge 54 and at those portions of media that project outward from beneath print cartridge 54.

Likewise, Smith merely discloses airflow from fan 16 directed at guide 12 underlying media 2. Airflow from fan 16 is not directed at platen 6 which underlies media 2 in the printzone. Accordingly, added Claim 61 is believed to be patentably distinct over the prior art of record for this additional reason.

C. Added Claim 62.

Claim 62 depends from Claim 18 and further recites that the airflow is directed from a vent having an opening between the ink dispensing element and the first surface of the media.

The prior art of record fails to disclose or suggest directing airflow from a vent having an opening between the ink dispensing element and the first surface of the media, wherein the airflow has a component which varies across the media in a transverse direction. For example, nowhere does Richtsmeier nor Smith disclose or suggest that its airflow varies in a transverse direction across the media. Moreover, Richtsmeier clearly does not include a vent having an opening located between the ink dispensing element and the surface of the media. Thus, added Claim 62 is believed to be patentably distinct over the prior art of record for this additional reason.

VI. Conclusion.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 08-2025. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 08-2025. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 08-2025.

Respectfully submitted,

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